ABSTRACT

An apparatus for and a method of iterative equalization for communication over noisy channels suitable for use with a wide range of different types of communications systems and channels [[and]] that is particularly applicable to power line based communication systems. ~~The equalization~~ Equalization of [[the]] received ~~symbol~~ symbols is achieved by iteratively removing the influence of previous symbols dispersed due to channel ISI. Equalization is performed using iterative subtraction in combination with calculations based on the inverse of the transfer matrix. The impulse response of previous symbols is subtracted out to yield the impulse response of the received symbol. The estimate of the current symbol $\tilde{B}_n$ is then calculated by passing the modified received symbol through a matched filer which functions to remove the effect of channel ISI from the symbol. Multiple iterations are performed to improve the accuracy of the resultant symbol decision.